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## Enhancer-trap Flippase Lines for Clonal Analysis in the Drosophila Ovary.

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### Public Summary:

#### Scientific Abstract:

The Drosophila melanogaster genetic tool box includes many stocks for generating genetically mosaic tissue in which a clone of cells, related by lineage, contain a common genetic alteration. These tools have made it possible to study the post-embryonic function of essential genes, and to better understand how individual cells interact within intact tissues. We have screened through 201 enhancer-trap flippase lines to identify lines that produce useful clone patterns in the adult ovary. We found that approximately 70% of the lines produced clones that were present in the adult ovary, and that many ovarian cell types were represented among the different clone patterns produced by these lines. We have also identified and further characterized five particularly useful enhancer-trap flippase lines. These lines make it possible to generate clones specifically in germ cells, escort cells, prefollicle cells, or terminal filament cells. In addition, we have found that chickadee is specifically upregulated in the posterior escort cells, follicle stem cells, and prefollicle cells that comprise the follicle stem cell niche region. Collectively, these studies provide several new tools for genetic mosaic analysis in the Drosophila ovary.

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